

# Mid-Atlantic Regional Seed Bank

Under proper storage conditions, seeds have the potential to remain viable for hundreds of years. Taking advantage of seeds' unique biology, seed banks can serve as a safeguard against extinction in the wild and also provide the necessary seeds for restoration and conservation.

The Mid-Atlantic Regional Seed Bank (MARS-B) is a cooperative conservation effort established by the New York City Department of Parks and Recreation. We work with a network of federal agencies, botanic gardens, arboreta and zoos in a national effort know as Seeds of Success (SOS) to collect and bank the entire US Flora. To date this effort has made 13,000 native seed collections across the country.

As a partner in the SOS program, MARS-B organizes conservation seed collections in the Mid-Atlantic Region for this national program while striving to help meet the seed needs of the region.

The Mid-Atlantic Regional Seed Bank takes an ecosystems approach to conservation. Our goal is to collect seed from targeted native plant species across every eco-region in the Mid-Atlantic. It is these wild seeds that serve as the raw materials for regional conservation. To ensure that this critical resource is properly safeguarded and managed using sound scientific principals, MARS-B is working to build a Seed Network, to develop and make available appropriate native plants and seeds for restoration and conservation across the region.

***“Seed is a critical natural resource that has largely been unrecognized, unprotected and certainly undermanaged.”***

**-Ed Toth, MARSB Director**

In Partnership with:



The United States Forest Service



The Northeastern Area State and Private Forestry



The New York State Department of Conservation



The New York City Department of Parks and Recreation

## Mid-Atlantic Regional Seed Bank

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## Mid-Atlantic Regional Seed Bank

***Help us save New York's Ash trees for future generations!***



# Ash Seed Conservation

## Seed Collection

Collecting seed is a fast and inexpensive way to preserve germplasm. By conserving the genetic diversity of ash species before the populations are lost, we have more opportunities to adequately restore the species to the landscape once a successful biological control is found. Additionally, seed can be provided to researchers looking for ways to control the EAB and geneticists and breeders developing resistant populations.

Scientists with the NRCS and NSL determined the minimum number of seed collections needed to capture the maximum genetic variation, is 50 evenly distributed collections per species, per ecoregion. This strategy first gets implemented in areas where the EAB has already been discovered and then applied to surrounding areas.

In New York State there are nine different ecoregions and three different ash species (*Fraxinus americana*, *F. pensylvanica*, and *F. nigra*). That makes a total of 450 collections per species for a grand total of 1,350 collections. Making seed collections represents a measurable action that every landowner can take, proactively

## Things you can do to help

- Scout for ash trees with seed in your area
- Attend a collection workshop
- Collect seed from ash trees on your property
- Join a volunteer ash seed collection group
- Contact Clara Holmes for information on how to pitch in:  
[clara.holmes@parks.nyc.gov](mailto:clara.holmes@parks.nyc.gov)

### *Fraxinus pensylvanica* – green ash

**Habitat:** Poorly drained soils, along stream banks in bottom lands and throughout wet woods

**Features:** Usually 7 leaflets, but can range from 5-9; leaflets are not sessile (closely attached) to the rachis (central stem); pointed, narrow seeds born in tight panicles



Illinois State Museum Herbarium

### *Fraxinus americana* – white ash

**Habitat:** Uplands sites, often in moist but well drained soils; commonly growing next to green ash but not black

**Features:** Usually 7 leaflets, but can range from 5-9; lighter green underside; leaflets not sessile to the rachis, round seeds borne in loose panicles



University of North Carolina Herbarium

### *Fraxinus nigra* – black ash

**Habitat:** Poorly drained sites such as swamps, streams and riverbanks; often found growing with green ash

**Features:** 7-11 leaflets sessile to the rachis; flat seeds born in loose panicles



Illinois State Museum Herbarium

“Seed collection is the primary focus of the conservation efforts at the present because seeds are a good, fast, and relatively inexpensive way to collect and preserve germplasm ex situ.”  
-NSL Ash Preservation Plan

## Ash Seed Conservation Threats

The Emerald Ash Borer is causing one of the worst ecological disasters in recent history. By boring into the cambium layer of ash tree species, it is causing the death of all three ash species found in New York State.

On average, the basal area of Ash makes up over 7% of NY forests, and in some areas more than 25%. Some estimates of the number of individual ash trees in the state are above 900 million. Losing ash species from our forests will result in an unpredictable shift in our ecosystem as new species will move in to fill the void.

## Preserving Genetics

Beginning in 2005 the Natural Resources Conservation Service (NRCS) began collecting Ash seed to preserve the genetic resources of all ash species. This effort has grown since 2005 and is now lead by the United States Forest Service's National Seed Lab (NSL) and the Agricultural Research Services. It has over 50 cooperators including the NRCS, the Bureau of Land Management, and, more locally, MARSB.

The goal of the Ash Genetic Resources Conservation Plan is to preserve as much genetic variation within each species as possible. Doing so will provide the best chances of preserving the species ahead of its likely extinction.